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NOTICE OF ALLOWANCE AND FEE(S) DUE

69316 7590 09/30/2009

MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052

EXAMINER

BUCKINGHAM, KIELLYE DEE

ART UNIT

PAPER NUMBER

2165

DATE MAILED: 09/30/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/725,665	12/02/2003	Jonathan Tang	M61.12-0561	5079
TITLE OF INVENTION: METADATA DRIVEN INTELLIGENT DATA NAVIGATION				

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	12/30/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
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P.O. Box 1450
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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69316 7590 09/30/2009

MICROSOFT CORPORATION
ONE MICROSOFT WAY
REDMOND, WA 98052

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	NO	\$1510	\$300	\$0	\$1810	12/30/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
BUCKINGHAM, KELLYE DEE	2165	707-100000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1392 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1392 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

10/725,665

Applicant(s)

TANG ET AL.

Examiner

KELLYE D. BUCKINGHAM

Art Unit

2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to July 28, 2009.
2. ☒ The allowed claim(s) is/are 1-7,9-12,14-35 and 41.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/KELLYE D BUCKINGHAM/
Examiner, Art Unit 2165

/Neveen Abel-Jalil/
Supervisory Patent Examiner, Art Unit 2165

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed July 28, 2009 in response to PTO Office Action mailed on May 28, 2009. The Applicant's remarks and amendments to the claims and/or the specification were considered with the results that follow.
2. In response to the last Office Action, claims 1-24 and 26-35 have been amended. Claim 36 is cancelled. Claim 41 is added. As a result, claims 1-35 and 41 remain pending in this application. As result of this Examiner's Amendment, claims 8 and 13 are cancelled. Therefore, claims 1-7, 9-12, 14-35 and 41 are pending.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview by Christopher L. Holt on September 23, 2009.

In the claims:

Proposed amended claims 1, 17 and 41 with cancelled claims 8 and 13.

1. (Currently Amended) A computer-implemented method for enabling a user to extract information from business data, comprising:

receiving an object model description describing an object model used in
collecting the business data;

generating a dimensional object model and an analytical programming object
model from the object model description, wherein generating comprises
deriving data from both the dimensional model and the object model such
that the analytical programming model represents data derived from both
the dimensional model and the object model;

automatically identifying, using a processor that is a functional component of the
computer, a data navigation path between a set of business data in the
object model and a set of business data in the analytical programming
model;

wherein automatically identifying a data navigation path further comprises

acquiring a set of metadata from a metadata store, the set of metadata
being utilized as a reference to support the automatic identification of the
data navigation path;

storing, on a computer-readable storage medium, a record of the automatically
identified data navigation path;

providing an indication of the automatically identified data navigation path to the
user, wherein the indication of the automatically identified data navigation

path is provided to the user as part of a collection of automatically identified data navigation paths that includes an automatically identified logic association type of navigation path;

receiving, from the user, a command to activate the automatically identified data navigation path; and

responding to the command by facilitating an automatic transitioning of a display of the business data, wherein automatically transitioning comprises automatically transitioning between a display of the set of business data in the object model and the set of business data in the analytical programming model.

8. (Cancelled)

13. (Cancelled)

17. (Currently Amended) A system for enabling a user to extract information from business data, the system comprising:

a plurality of data navigation providers each providing a different type of data navigation;
a navigation service layer that transmits a navigation service request to one or more of the data navigation providers;
a metadata service that provides the plurality of data navigation providers with access to a metadata store, and wherein each data navigation provider responds to a received data navigation request by accessing the metadata service with a processor and processing metadata from the metadata store so as to automatically identify at least one data navigation path, and wherein a particular one of the plurality of data

navigation providers responds to a received data navigation request by automatically identifying, based at least in part on said metadata accessed from the metadata service, a data navigation path between a set of business data in an object model and a set of business data in an analytical programming model, the analytical programming model being separate and distinct from the object model ; and an output interface device that displays to the user the data navigation paths automatically identified by the plurality of data navigation providers, wherein the automatically identified data navigation paths are provided to the user on the output interface as part of a collection of automatically identified data navigation paths that includes an automatically identified logic association type of navigation path.

41. (Currently Amended) A computer-implemented method for enabling a user to extract information from business data, comprising:

receiving an object model description describing an object model used in collecting the business data;

generating a dimensional object model and an analytical programming object model from the object model description, wherein generating comprises deriving data from both the dimensional model and the object model such that the analytical programming model represents data derived from both the dimensional model and the object model; and

automatically identifying, using a processor that is a functional component of the computer, a data navigation path between a set of business data in the object model and a set of business data in the analytical programming

model wherein automatically identifying a data navigation path further comprises acquiring a set of metadata from a metadata store, the set of metadata being utilized as a reference to support the automatic identification of the data navigation path-; and providing the user with an indication of the automatically identified data navigation path, wherein providing comprises providing as part of a collection of automatically identified data navigation paths that includes an automatically identified logic association type of navigation path.

Allowable Subject Matter

4. Claims 1-7, 9-12, 14-35 and 41

REASONS FOR ALLOWANCE

5. The following is an examiner's statement for reasons of allowance: The present invention is directed to a system is provided for enabling a user to extract useful information from a collection of business data. Relationships that connect various data elements are analyzed in order to identify intelligent data navigation paths. The intelligent data navigation paths are utilized as a basis for enabling the user to move between related sets of data.

The closest prior art is Williamson et al. US Patent 6704744 in view of Bakalash et al. US Patent 7315849.

Williamson et al. is directed to creating a model that maps object classes in an object-oriented environment to a data source. The model maps the relationship between properties of each object class and data of the data source. The present invention can be used with a data source such as a relational database, user interface, file system, or object-oriented database. An application's object classes and data source schema are designed independent of the other since the model can be used to map one to the other. The model is comprised of entities and attributes. An entity maps to an object class and to at least one table of the DBMS. An entity contains attributes either simple or derived. A simple attribute maps to a DBMS column. A derived attribute is a combination of other attributes and does not directly map to a DBMS column. A relationship creates a link between entities of the model. A relationship can be used to flatten an attribute or flatten a relationship. A flattened attribute is an attribute of one entity that is added to another entity. A flattened relationship is created by the elimination of intermediate relationships between two entities. Relationships can be either unidirectional or bidirectional. A unidirectional relationship has a single traversal path that has a source entity and a destination. A bidirectional relationship has two traversal paths. A reflexive relationship can be created using a single entity. The model is used to synchronize object properties and the data of the data source.

Bakalash et al. is directed to an enterprise-wide data-warehouse comprising a database management system (DBMS) including a relational datastore storing data in tables. An aggregation module, operatively coupled to the relational datastore aggregates the data stored in the tables of the relational datastore and storing the

resultant aggregated data in a non-relational datastore. A reference generating mechanism generates a first reference to data stored in the relational datastore, and a second reference to aggregated data generated by the aggregation module and stored in the non-relational datastore. A query processing mechanism processes query statements, wherein, upon identifying that a given query statement is on the second reference, the query processing mechanism communicates with the aggregation module to retrieve portions of aggregated data identified by the reference that are relevant to the given query statement.

The combined references fail to anticipate or render the recited features: wherein automatically identifying a data navigation path further comprises acquiring a set of metadata from a metadata store, the set of metadata being utilized as a reference to support the automatic identification of the data navigation path; storing, on a computer-readable storage medium, a record of the automatically identified data navigation path; providing an indication of the automatically identified data navigation path to the user, wherein the indication of the automatically identified data navigation path is provided to the user as part of a collection of automatically identified data navigation paths that includes an automatically identified logic association type of navigation path; receiving, from the user, a command to activate the automatically identified data navigation path; and responding to the command by facilitating an automatic transitioning of a display of the business data, wherein automatically transitioning comprises automatically transitioning between a display of the set of business data in the object model and the

set of business data in the analytical programming model as in the independent claim 1, 17 and 41.

These features, together with the limitations of the dependent claims are novel and non-obvious over the prior art of record. The dependent claims 2-7, 9-12, 14-16 18-35 and are definite, enabled by the specification, and further limiting the independent claims are also allowable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KELLYE D. BUCKINGHAM whose telephone number is (571)270-1756. The examiner can normally be reached on Monday- Friday, 7:30-5:00 EST alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Neveen Abel-Jalil can be reached on 571-272-4074. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 23, 2009

/KELLYE D BUCKINGHAM/
Examiner, Art Unit 2165

/Neveen Abel-Jalil/
Supervisory Patent Examiner, Art Unit 2165